

Appl. No. 10/038,915  
Reply to Office Action of June 8, 2007

RECEIVED  
CENTRAL FAX CENTER

SEP 10 2007

### REMARKS/ARGUMENTS

The Examiner has rejected claims 2, 4, 7 to 14, 16 to 18 and 20 under 35 U.S.C. 103(a) as being unpatentable over Wallace et al. (U.S. Pat. 6473467) in view of Makipaa (U.S. Publication US 2001/0031639 A1) and Mody et al. (U.S. Pat. 7088782 B2). It is respectfully submitted that the Examiner has failed to satisfy the requirements for a finding of obviousness recently articulated by the U.S. Supreme Court in its decision in *KSR Int'l v. Teleflex, Inc., No. 04-1350, slip op. at 14 (U.S., Apr. 30, 2007)*. Accordingly, as a matter of law, the rejection of the claims cannot stand and must be rescinded.

#### Law

The United States Supreme Court visited the manner by which "obviousness" under 35 U.S.C. §103 is to be interpreted in the case of *KSR Int'l v. Teleflex, Inc., No. 04-1350, slip op. at 14 (U.S., Apr. 30, 2007)*. As the Court noted in *KSR*, once the scope of the prior art is ascertained, the content of the prior art must be properly combined. An obviousness inquiry requires review of a number of factors, including the background knowledge possessed by a person having ordinary skill in the art, to determine whether there was an apparent reason to combine the elements of the prior art in the fashion claimed by the present invention. For the Patent Office to properly combine references in support of an obviousness rejection, the Patent Office must identify a reason why a person of ordinary skill in the art would have sought to combine the respective teachings of the applied references. *Id.* at 15. Even if the Patent Office is able to articulate and support a suggestion to combine the references, it is impermissible to pick and choose elements from the prior art while using the application as a template. *In re Fine*, 837 F.3d 1071 (Fed. Cir. 1988). It is respectfully submitted that the 35 U.S.C. §103(a) rejection is deficient for its failure to comply with the U.S. Supreme Court's requirements recently articulated in *KSR*.

#### *Prima Facie* Obviousness Threshold

MPEP 2142 explains the procedural tool of the *prima facie* obviousness threshold, i.e. the applicant does not bear the burden of addressing substantive issues of obviousness (such as secondary considerations) until the examiner makes the *prima facie* case. A *prima facie* case

Appl. No. 10/038,915  
Reply to Office Action of June 8, 2007

requires (1) the all elements be taught in the cited reference or references when combined; (2) reasonable expectation of success; and (3) motivation to combine the cited references. 1 and 2 remain irrespective of KSR. The May 3, 2007 memo from Margaret Focarino dealing with the KSR decision states that (3) remains a requirement. More specifically, KSR requires that there be a reason why a person of ordinary skill in the art would have combined the references, and the Focarino memo requires the Examiner to provide such a reason during prosecution.

#### **References Applied by the Examiner**

##### **A. Makipaa**

The Examiner asserts that Makipaa discloses an "OFDM system using a multiplexed pilot channel, common synchronization channel, and broadcasting channel repeated in a predetermined order" (emphasis added). The Examiner refers to page 2 paragraph 31 and page 3 paragraph 37 in support of this contention. With respect, Makipaa is not directed to OFDM communications. Instead, the document is directed to CDMA, and makes only passing reference to OFDM at paragraph 43, and even then CDMA is used as an overlay over OFDM, with CDMA channels still being referenced. Makipaa does disclose the use of dedicated code channels for each of pilot, synchronization (para 31), and for broadcast (para 37). However, code channels are continuous, and are not analogous to header symbols that are inherently transmitted on a periodic basis, as recited in independent claims 10 and 17. Thus, with respect, Makipaa teaches a CDMA system using a continuous multiplexed pilot channel, common synchronization channel, and broadcasting channel on respective CDMA code channels.

##### **B. Mody**

The Examiner asserts that Mody is relevant for its purported teaching of different training sequences for each antenna of a transmitter, with different transmitters using the same set of training sequences, referencing to column 17, lines 1-18. Figure 1 of Mody shows an entire communications network. There is a single transmitter and a single receiver.

The passage referred to by the examiner teaches two alternatives:

- Different sequences transmitted from different antennas of the single transmitter (col.

Appl. No. 10/038,915  
Reply to Office Action of June 8, 2007

17 lines 8,9);

- The same sequence transmitted from different antennas of the single transmitter (col. 17 lines 12-14).

Thus, the Examiner is not correct where he says that "different transmitters using the same set of training sequences" since there is no reference to more than one transmitter in Mody.

The Examiner has conceded that this limitation is not taught in any of the other references. Given that it is not taught in Mody, none of the references teach the limitation.

### Argument

Having established that neither Makipaa nor Mody et al. teach the claim limitations that were referred to in the Examiner's arguments, applicant respectfully submits that the references in combination do not teach all of the claim limitations and as such the first criteria for the establishment of a *prima facie* of obviousness has not been satisfied.

On page 5 of the Office Action, the Examiner argues that the motivation for combining Wallace and Makipaa is to allow synchronization and broadcast information to be periodically transmitted to every receiver of the system. Wallace teaches an OFDM system rather than a CDMA system as taught in Makipaa; as such combining the two references in the manner claimed would not achieve the motivation suggested by the Examiner. In particular, combining Makipaa and Wallace will not result in the system that allows synchronization and broadcast information to be periodically transmitted to every receiver in the system. As such, this motivation for combining does not exist.

The Examiner's motivation for combining those two references with Mody, set out at the top of page 6, are tied to his view of that reference teaching that different sequences for each antenna of a transmitter are transmitted but with the same sequence being used and transmit antennas of different transmitters. As detailed above, this was an incorrect interpretation of Mody, and as such this also affects the Examiner's motivation argument.

On the basis of the above, Applicant respectfully submits the Examiner has not provided a reason why a person of ordinary skill in the art would have combined the references.

Appl. No. 10/038,915  
Reply to Office Action of June 8, 2007

On this basis the Examiner is respectfully requested to withdraw the rejection of the claims under 35 U.S.C. 103(a) as set out in paragraph 4 of the Office Action.

It is noted that the above discussion has focused on claim 10. Similar comments apply to claim 17. The remaining claims objected to by the Examiner depend upon claim 10 or 17 either directly or indirectly. Applicant is not conceding that the additional features recited in these dependent claims are found in the references as set out by the Examiner. However, it is respectfully submitted that it is not necessary to address these issues at this time in view of the strong case for patentability of the independent claim 10.

In paragraph 5 of the detailed action, claims 5, 6, 19 and 21 to 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace et al. in view of Makipaa and Mody et al. and in further view of Applicant's admitted prior art. Applicant respectfully submits that these claims depend upon either claim 10 or 17 and, as such, should be patentable for all of the reasons set out above. For this reason, it is respectfully submitted that it is not necessary for the Applicant to address the additional combination of the three cited references relied upon previously with the Applicant's admitted prior art. Please note that in so doing, Applicant does not concede that the so-called "Applicant's admitted prior art" is, in fact, "prior art." In paragraph 6 of the detailed action, claims 57 to 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace et al. in view of Applicant's admitted prior art.

The Examiner is correct that Wallace et al. teaches an OFDM symbol having a prefix that is a cyclic repetition. However, referring to Figure 1B, this cyclic repetition or prefix is attached to the beginning of every OFDM symbol. That is the conventional approach. Wallace does not specifically disclose transmitting an OFDM preamble having a prefix that is a cyclic repetition, as recited in Applicant's claims.

The Examiner argues that Applicant's admitted prior art discloses using multiple identical header symbols. Applicant respectfully disagrees. The Applicant's admitted prior art refers to "using multiple identical headers". However, there is nothing to suggest these are not transmitted in the same way as a conventional OFDM symbol structure, namely a prefix followed by a header symbol. Thus, the Applicant admitted prior art is teaching a preamble of the

Appl. No. 10/038,915  
Reply to Office Action of June 8, 2007

following form:

Prefix	Header Symbol	Prefix	Header Symbol
--------	---------------	--------	---------------

whereas, claim 57 teaches a preamble of the following form:

Prefix	Header Symbol	Header Symbol
--------	---------------	---------------

Note that the advantage of this approach is that there is a savings of bandwidth by not having to include a prefix for the second header symbol.

On this basis, it is respectfully submitted that neither Wallace nor the Applicant's admitted prior art teach the aspects of claim 57 identified by the Examiner and as such the Examiner is respectfully requested to withdraw the rejection of claim 57 under 35 U.S.C. 103(a). Claims 58 to 61 all depend upon claim 57 and should be patentable for the same reasons.

In view of the fact that all of the Examiner's rejections have been addressed, the Examiner is respectfully requested to allow the application.

In view of the foregoing, early favorable consideration of this application is earnestly solicited.

Respectfully submitted,

JIANGLEI MA, ET AL.

By

  
Allan Brett

Reg. No. 40,476

Tel.: (613) 232-2486 ext. 323

Date: September 10, 2007

RAB:mtc